# Butt Fusion Integrity & Evaluation of NDE Technologies

## 1st Quarterly Report
**Public Page**

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This project started on 1 July 15 2007.

The primary objective of the program is to develop tightly controlled butt heat fusion process through comprehensive testing and evaluation using novel test methods which will help to validate the safe long term performance of PE joints under actual field conditions. It will also serve as the basis for an effective reference point for the continued development of advanced Non-Destructive Evaluation (NDE) technologies.

Specifically, this program aims to develop comprehensive analytical models to characterize the impact of various types of in-service stress states and fusion process variables; develop comprehensive test data to characterize the long term performance of joints made under parametrically controlled set of fusion variables; develop a set of criterion to identify "suspect joints" and integrate novel test methods and fusion parameters within applicable industry standards and specifications (ASTM, PPI, 49CFR Part 192).

This report addresses project tasks:

**Task 1: Steering Committee Meetings (Ongoing)**
NYSEARCH to lead a joint industry steering committee with GTI's assistance consisting of members from each of the respective stakeholders including gas utility companies, regulatory agencies, and pipe/fitting and equipment manufacturers to ensure an objective review of the data/information that is developed.

- **Company Surveys- Butt fusion procedures - Status: Complete**

## Task 2: Development of an Analytical Model

GTI will develop a comprehensive analytical model to quantify the impact of both the fusion process variables and in-service stress states. This is not only fundamental but a necessary first step in terms of developing the appropriate test methods to effectively characterize long-term performance. This step will provide the basis for identifying and improving NDE technologies to evaluate joint integrity and eventually create the fusion improvements needed for field implementation.

- **Review data and published literature - Status: Complete**
- **Development of an Analytical Model - Status: Initiated**